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THE OKALOACOOCHEE SLOUGH.¹

BY FREDERIC H. KENNARD.

Plates XIII-XV.

WE camped on the nights of March 13 and 14, 1914, about three miles north of the "main strand" of the Big Cypress, close beside the trail, in an open glade among the cypress heads; and both nights the wind blew so that I was glad to crawl into the lee of a neighboring tree.

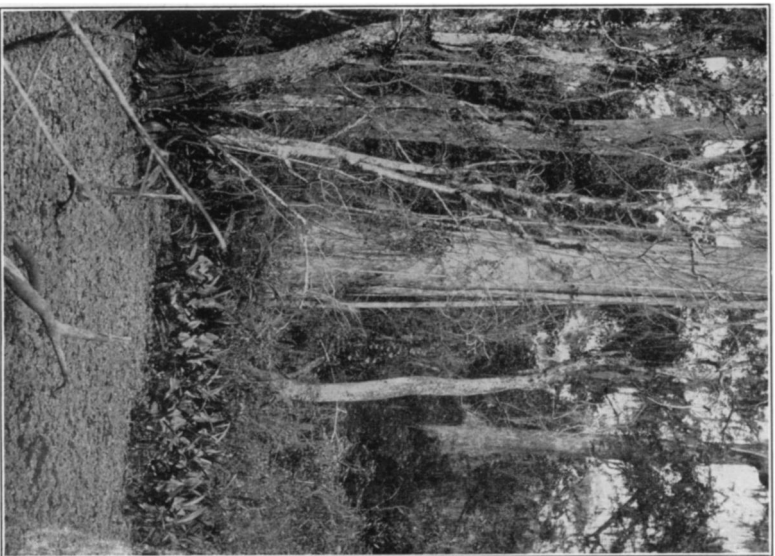
Here we hunted turkeys, obtaining some of both sexes, and collecting several Swallow-tailed Kites, whose nesting season was just beginning, and which I think are, with the exception of the Roseate Spoonbill, the most beautiful birds I have ever shot.

On the 15th we traveled north, along the Immokalee trail for about eight miles, and then struck out across the prairie, skirting the edge of the cypress swamp and pine woods in a northeasterly direction for about seven miles, until we came to a little pine island near the edge of the Okaloacoochee Slough, where we camped for several days.

During the trip I discovered a Swallow-tailed Kite building its nest in the top of a tall, slim pine, near the edge of some pine woods, and close by a cypress swamp. The nest was about sixty-five feet up, and instead of being built against the trunk of the tree, as is so often the case with raptors, was built at the end of an upreaching limb, and from the ground, looked like a rather flimsy structure of sticks, to which the old bird was now adding moss. In shooting this bird I broke his right wing at the pinion joint, and he continued to fly screaming above my head, with the pinion flapping, until I brought him down with another shot. Their powers of flight are certainly marvellous.

En route we saw numbers of cattle, poor scrawny beasts, scattered about the prairie, most of them pretty wild, and every once in

¹ Cf. Auk, Jan., 1915, p. 1, for details of this expedition through southern Florida.



1. SWAMP BENEATH THE WOOD IRIS ROOKERY.



2. NESTS OF THE WOOD IRIS.

a while a group of buzzards marked the spot where one had died. We heard but few Sandhill Cranes, until we neared the Okaloacoochee, when we began to see them, often two or three at a time, and flushed one flock of five and then another of seven that flew off "hollering" at our approach. Here also we saw our first Florida Burrowing Owls, and discovered one of their burrows only a short distance from where we were to camp.

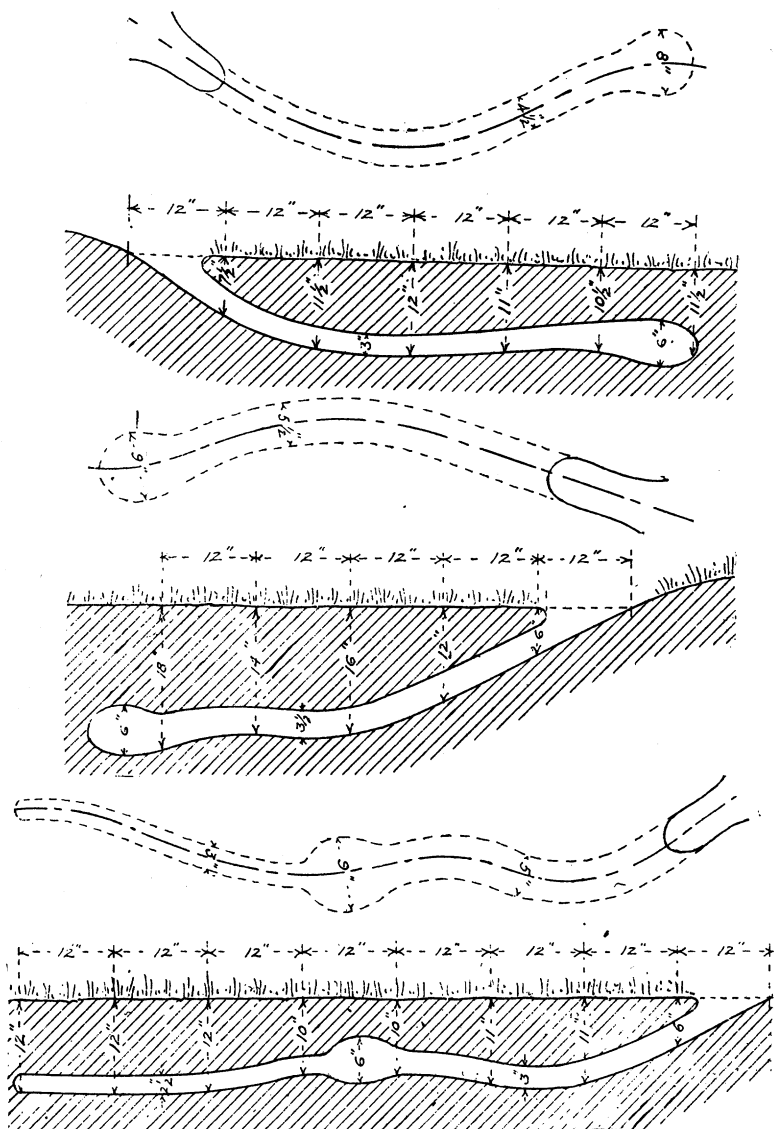
The Okaloacoochee Slough, where we proposed spending the next couple of weeks, is a waterway extending from a few miles south of Fort Thompson, on the Caloosahatchee River, in a southerly direction into the Big Cypress, and from thence to the Gulf. It is bordered by a series of prairies, sloughs, marshes and swamps; most of which are wet throughout the entire year; and seems to be a "fly-way" for all the water birds in that part of the State that do not go up the Gulf coast.

Our first camp was near the southerly end of a large cypress swamp, through which the waters of the slough took their way. The prairie here is dotted with sloughs, the haunt of Sandhill Cranes, the Florida Black Duck, and of countless Herons and Ibises; and east of the swamp it stretches away to the horizon, where the sky line is broken only by an occasional pine island, and by an easterly strand of the Big Cypress, which from here can just be seen.

Here we hunted Cranes and Black Ducks, and I spent much time on the prairie watching the Burrowing Owls. Peter told me they were not nearly so numerous as formerly, when colonies of twenty and twenty-five together were not uncommon; and this was the only location he knew of in Lee County in which these interesting birds still bred.

They build their nests out in the sandy soil of the open prairie, on the higher places, from which the floods have receded, and which here had been burned over earlier in the season. We found numbers of their little mounds scattered about, but hardly thick enough to be called a colony.

On approaching an inhabited burrow, if one or both of the owners were not already in sight, they very quickly appeared; and standing bolt upright on their little mound of sand at the mouth of the burrow, would courtesy gravely to me, until on my nearer



Three Burrows of the Florida Burrowing Owl. Horizontal and vertical sections.

approach, they would fly off onto the prairie, perhaps fifty or a hundred feet, where they would continue their courtesies, uttering at the same time their calls, *Whit, whit-whit*, a long and two short notes: or *Whit-whit, who-who-who-who-whit*, two short notes followed by a stutter, a little lower in tone but ending with a short sharp *whit* at the end; or *Whit-whit, who-who-who-who-who*, two short *whits*, followed by the stutter. Often instead of flying they would run over the prairie, reminding me of the Robins one sees on the lawn, which after standing upright and still, suddenly bend forward and run.

I dug up a number of their burrows, but it was apparently too early to find eggs, though some of the nests appeared to be completed. These burrows, several of which I measured carefully, seemed to run in any direction, east, west, north or south, just as the birds happen to choose, for a distance of from four and a half to eight feet, with the floor of the burrow usually averaging from ten to twelve inches below the surface of the prairie, though we found one that ran as deep as eighteen inches.

The tunnels, which were usually from three to three and a half inches high and from four to five and half wide, ran down grade until about two feet from the entrance, and then nearly on a level, until just before the nest was reached, when there would be a slight rise in the grade, apparently to keep the nest a little above any water that might, in spite of the natural drainage of the soil, gather in the hole in time of storm. The nest chambers, which were oval, were about six inches high and from eight to nine inches in diameter, with a slight depression in the bottom; and those that were nearing completion were rather carefully lined with weeds and grasses, but in no case with cow dung (see article by S. N. Rhoads in 'The Auk' for January, 1892). In several of the burrows we found a small tunnel about two and a half by three inches in diameter, extending for distances varying from eight or ten inches to nearly four feet and ending abruptly. What these tunnels were built for, I am unable to explain, or how the bird managed to make them so small. Of one thing only am I certain, and that is that they were built before the nest was lined.

The little piles of sand at the mouth of the burrows necessarily varied in size according to the amount of excavation. The

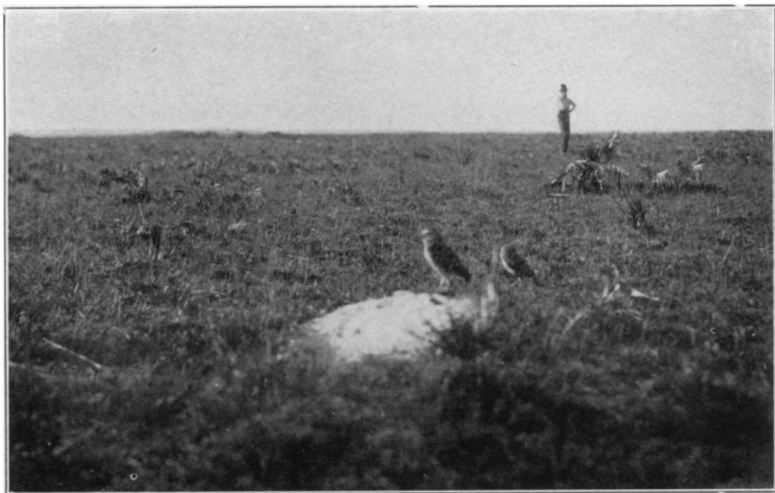
largest that we saw measured forty by forty-four inches across, and was only three inches in height. Some of them were very conspicuous, while others were partly overgrown with grasses, and we found one that was in the side of one of those "bull holes" which here dot the prairie—holes pawed in the earth by bellicose bulls.

When the owls flew, they flew softly as all owls do, but rapidly when they so desired, and frequently with high undulations and succeeding dives. They never went a hundred yards from their nests, and we could not drive them away from the vicinity. As soon as we were through investigating their nests, the little birds at once flew back to them, and showed a distress to which I was only reconciled by the knowledge that they would doubtless soon begin to rehabilitate some old burrow, of which there were plenty in the vicinity. Once Tom and I discovered in the distance a burrow from which little jets of sand were issuing with great frequency and regularity, about three to the second, onto the mound in front. One of the birds was just inside the mouth of the burrow, apparently throwing the sand out backwards with his feet.

The owls never seemed to sleep, day or night, at least I never caught them at it, and once I went out on the prairie on a pitch dark night at 3 A.M., in an effort to see if one particular pair was at home, and blocked up the mouth of the burrow, only to find them a few yards away, apparently as well able to take care of themselves in the dark as in the daytime.

On the 18th we found a slough at one end of which was a little willow island, in which there were ten nests of Ward's Heron; seven of them contained well grown young, and three had well incubated eggs. Numbers of Boat-tailed Grackles were building here, some of their nests two or three feet above the water among the vines that hung pendant from the willows, while others were fifteen feet high on the out-reaching branches of the willows themselves. Most of the nests were in process of construction, though a few held an egg apiece, while one contained two eggs and another three. There was a flock of "Curlew" or White Ibises here, together with Louisiana and Little Blue Herons, and a number of Yellow-crowned Night Herons.

We were still in the turkey country and succeeded in picking up



1. FLORIDA BURROWING OWLS AT HOME.



2. NESTS OF WARD HERON.

another fine specimen of the much wanted hen; and gobblers could be heard every morning among the neighboring pine islands. We saw several hawks flying low and hunting over the prairie, that Tom declared were Everglade Kites, but which I never got near enough to shoot, and was unable to identify. I did, however, see several Marsh Hawks. There were also Killdeer and a few Snipe in some of the marshes, and we saw one bunch of about a dozen Greater Yellow-legs.

On March 20th when I had gone out early to see what the Burrowing Owls were up to, I took the following notes, which may be of interest as an account of the early morning bird life that immediately surrounded us.

"3 A.M. Awoke to find the moon about an hour high, and two Horned Owls hooting in the pine woods to the southwest. Do they always hoot as the moon rises, or is it that that is the only time I ever happen to hear them?"

"3.40 Black Ducks calling from slough to the eastward."

"4.20 As I was walking over the prairie the Sandhill Cranes began calling from all directions. Whether or not some of them were first aroused by me I am unable to say."

"4.35 A Chuck-will's-widow made a few calls."

"4.40 A Whip-poor-will after two or three preliminary throat clearers, started in with seventy-six calls, as against one hundred and eighty-eight I heard one make successively yesterday A.M."

"4.45 I can hear two Horned Owls, one Barred Owl, which has been hooting at intervals ever since I awoke, two Whip-poor-wills and one Chuck-will's-widow, all calling at once. The Horned Owls' notes sound thus: *Whoo, who-who-who, whoo whoo*; or *Whoo, who-who-who, who-who-who, whoo whoo*; a far deeper tone than those of the Barred Owl."

"4.50 Black Ducks again set up a squawking, Cranes are 'holler-ing' all over the prairies, and it is beginning to get light in the east. A Barred Owl is hooting close by, another in the middle distance. and a third far off."

"4.55 Night Herons quawking, Florida Yellow-throats singing in the nearby clumps of saw palmettos, and two Chuck-will's-widows and one Whip-poor-will are apparently trying to sing each other down."

"4.58 Boat-tails are beginning to call, and Jorees (Towhees) are everywhere in the palmettos about us."

"4.59 Black Ducks again squawking, Meadowlarks, Shrikes, Florida Yellow-throats everywhere, and Herons of some kind, either Louisiana or Little Blues calling from the swamp."

"5.03 A Turkey gobbling away off the southwest."

"5.04 Turkey gobbling frequently."

"5.05 More quawking of Herons, Barred Owls continue performance, but Horned Owls seem to have quit. The Okaloacoochee with its low lying fog looks like a huge lake."

"5.06 Jorees and Florida Yellow-throats are calling continuously in every direction. I thought I heard a Song Sparrow in the distance, though it may have been a Savannah."

"5.08 That gobbler is trying for a record."

"5.09 A Cardinal is singing nearby. He may well have sung before, and escaped notice."

"5.16 Quail are beginning to call, the gobbler is calling again, and apparently replying to another that has just started gobbling south of us."

"5.17 Crows are cawing; a little late it seems to me."

"5.19 Red-bellied Woodpeckers and Florida Grackles are beginning to arrive in our grove."

"5.20 A Flicker is calling in the distance, and a big gobbler is gobbling just a short piece up the trail."

"5.32 Pine Warblers, Red-winged Blackbirds and Downy Woodpeckers in the pines about us."

We succeeded in collecting four Florida Black Ducks while at this camp — three drakes and a duck. I forgot to measure the duck before skinning, but the three drakes when laid out on my operating table, each measured twenty-three inches in length, which is considerably longer than the measurements usually given for this species, and I was very much interested in finding that they all, both sexes, had bright coral red legs. The bills of the drakes were very highly colored, and looked to me like the bills of the freshly killed specimens of the northern species. Some, at least, of these birds were beginning to breed, for although we found no nests ourselves, I was later lucky enough to secure a beautiful set of eleven fresh eggs, taken by a friend of Tom's on March 20, in a slough near Immokalee.



A BONNET LAKE ON THE OKALOACOOCHEE.



NEST OF THE SAND HILL CRANE.

On the morning of March 20 our long search for an occupied Crane's nest was rewarded by finding one that contained two well incubated eggs, in a slough away out in the prairie. The old bird, which we jumped directly from her nest, near the middle of the slough, flew off "hollering" and lit out on the prairie, from which point of vantage she could watch the proceedings. The nest was a huge affair about four feet by six in extent, and eight inches above the level of the surrounding water, with a depression about two inches deep, and was constructed principally of the dried stems of what looked to me like the pickerel weed with which most of these sloughs are filled.

In the afternoon we broke camp and traveled northeast across the prairie, around the cypress swamp, at the southerly end of which we had been camping, to a place known as the Widow McLean's Crossing, where a trail from Immokalee to the Seminole reservation crosses the Okaloacoochee.

Here in a sort of glade surrounded on three sides by a wonderful cypress swamp, someone had years ago built a shack, long since in ruins, planted a small grove of grapefruit, oranges and guavas, and cultivated the ground about them. "Lightwood" for our fires, and pasturage, were both in plenty; and we were out of reach of the bothersome prairie winds. There was plenty of good water that actually *ran* through the stream just back of camp; and, wonder of wonders, a place where I could bathe. The air was redolent with the odor of orange blossoms, the place fairly alive with birds, a delightful change after our strenuous experience of the last few weeks.

Late in the afternoon, while putting our camp to rights, the air was full of birds, thousands upon thousands of them flying over us, south to the adjoining cypress swamp. "Flint Heads" (Wood Ibis) in companies and the swift flying "Curlew" (White Ibis) in battalions and regiments, Louisiana and Little Blue Herons by the hundreds, with here and there a sprinkling of "Long Whites" (Egret), all in one continuous stream. Right in the middle of it we were startled by yells from Tom, and on rushing out into the open to see what the matter was, espied two "Pink Curlew" (Roseate Spoonbills) flying rapidly south with the other species.

From all the signs we were led to believe that there must be a

large rookery in the cypress swamp just south of us. The next morning, after making skins of a couple of Limpkins that Tom had collected the night before, we started for the middle of the swamp, above which we could see a number of "Flint Heads" soaring and wheeling high up in the air, very much after the manner of the Black Buzzards. We crossed the slough and coming out onto the prairie, which here stretched away to the easterly horizon, skirted the swamp for a short distance until we came to a trail used by the Seminoles, who come here from all over southern Florida for the huge cypress trees from which they make their dugouts.

En route we saw several Turkeys, and after a short walk came to the edge of one of the prettiest of Florida lakes, perhaps one hundred and fifty to two hundred yards long and from thirty to sixty yards wide, completely surrounded by a growth of wonderful moss-covered old cypress, that seemed fairly alive with birds. Anhingas, in larger numbers than I have ever seen assembled in so small a space, were flying rapidly about or craning their necks as they perched on overhanging boughs. There were Herons of various sorts about the edges of the lake, and numbers of wise looking old "Flint Heads" sitting solemnly among the tree tops. Wood Ducks were swimming among the buttressed trunks of the cypress trees at the border of the lake, and several huge alligators, as we came in sight, were seen to sink slowly beneath the surface of a pool at the southerly end.

I had crawled out on a prostrate stump to take a photograph of the beautiful scene, when suddenly a wonderful "Pink Curlew" came shooting out from one of the side aisles, across the lake in front of me. I must have been seized with something akin to buck fever, for I simply stood there open mouthed and staring, until at a yell from Tom about a dozen more flew out, and I managed to wake up sufficiently to secure three of them. Later we saw several more "Pinks," thirty or forty of them in all.

Of the Spoonbills collected, one was an adult female with egg in the oviduct; while the other two were immature — a male, and a female with ovaries undeveloped. The irides of the immature specimens, instead of being bright carmine, like their elders, were, to quote my notes, "of a nondescript color at first glance blue, but on closer examination a sort of dark hazel."

On Sunday, March 22, we rested and put in most of our time making up skins. The day was overcast and inclined to be rainy, but not enough so to discourage the birds. Cardinals, Mocking-birds, Tufted Titmice and White-eyed Vireos were singing in the trees about us, the occasional scream of Florida Bluejays could be heard, and once in a while the rattle of a Kingfisher flying overhead. Pileated Woodpeckers and Barred Owls called frequently from the slough behind us, and occasionally the squeak of Wood Ducks could be heard in the stream, which fairly teemed with them.

Right in front of my tent were several depressions in the dirt made by Turkeys when "dusting." A pair of Swallow-tailed Kites frequented the nearby pine wood, and the "hollering" of Sandhill Cranes could be heard in the distance. Chipping Sparrows, Florida Meadowlarks, Great Crested Flycatchers, Florida Grackles, Florida Red-wings, Buzzards, Florida Red-shouldered Hawks, Florida Crows, and Fish Crows, were nearly always about camp, and Ruby-throated Hummingbirds were flitting among the grapefruit blossoms overhead. I heard one Blue-headed Vireo. "Flint Heads," White Ibises, and Herons of various sorts were generally in sight, and every once in a while a yell from Tom proclaimed a "Pink" going by.

Some few "Flint Heads" were always on the move, flying back and forth from their rookery. The prairie was often dotted with them, seeking insects, I suppose; and on moonlight nights numbers of them could be seen feeding in the sloughs. About daylight they begin to come out of the swamp in numbers, flying over camp with loud rhythmic whistle of wings, mostly in a northerly direction; straggling along in small companies; perhaps a couple, three, five, seven, or nine at a time, and in one extreme case, twenty-two. In flight they remind me of Brown Pelicans, a few flaps of the wings and then a soar, but their company drill is not nearly so good as that of the Pelicans, who follow their leader with such remarkable regularity.

Every once in a while in the early morning, or late in the afternoon, one hears a great rushing sound like that of a closely approaching wind storm, and a huge flock of beautiful White Ibises goes rushing overhead. In flight they are much more rapid than the Wood Ibis, and seem to set their wings to soar only when swooping down to alight or when turning in their flight.

After breakfast on March 23, Tom and I again started for the "Flint Head" rookery, from which we had been diverted by the Spoonbills two days before. We struck south from the alligator lake through about the worst bit of swamp it has ever been my lot to traverse, wading up to our armpits in water covered with a of skim of "lettuce," or climbing six or eight feet in the air over prostrate trees, balancing ourselves on logs, crawling through vines or almost impenetrable jungle, and always dodging moccasins, until we came to the rookery, perhaps a half a mile from the lake. The cypresses here were magnificent, huge trees four, five, six or seven feet in diameter above the buttresses, and in one case over nine; growing well apart so that most of them had spreading tops.

Here in a strip from one hundred to two hundred yards wide and extending for a mile or so, was the rookery. Not all of the trees were occupied, but most of the good ones held from four or five to twenty nests apiece, clear out on the ends of upreaching branches. At the northerly end of the rookery the nests contained vociferous young. A little farther south most of them appeared to contain eggs, while at the southerly end the nests were still in process of construction. Apparently they had started to build at the northerly end first, and then as the newcomers took up their parental duties from day to day, extended the rookery south.

Here hour after hour there was a constant stream of birds flying back and forth from a clump of willows at the border of the swamp, that was being rapidly denuded of twigs and sticks, which the big birds broke off with their powerful bills and carried to their nests. Tom watched them for some time and reported that when a bird flew up to a willow and lit, it would perhaps grasp several twigs at once with its feet, apparently in order to get a better hold, and then seizing a twig with its bill, would pull and jerk until it broke off, or, if unsuccessful, get hold of some other twig, break it off, and then fly away.

Tom was also lucky enough to get a view at close range of several "Flint Heads" feeding in an open place in the water beneath some "pop ash" trees. He described them as walking solemnly back and forth in water about up to their knees, with tails erect; and when feeding dragging their bills beside them, upside down like a Flamingo, opening and shutting them rapidly

and apparently sifting the mud through them. When meeting, they would often throw their heads back, puffing out their feathers at the base of their necks, and, if quarrelsome, would snap their bills loudly at each other. In the rookery the continual clatter of snapping bills can be heard quite a distance.

We found a number of Spoonbills which were apparently just beginning their nesting season, and saw several standing on what I supposed to be their nests at the top of tall cypresses, while another was engaged in fixing up the lining of its nest.

Tom and I tried to make an approximate estimate of the number of birds in the rookery, but were unable to arrive at any satisfactory conclusion. The traveling was so difficult that we could not undertake to block off the swamp into small areas in which we could count the nests, and we had to content ourselves with guessing. Tom, after further explorations the next day, thought there were at least ten thousand nests of the "Flint Heads," while I felt sure there were more than five thousand. At any rate, there were a great many, and among them a few Spoonbills' nests.

The other birds, White Ibises, Herons, Anhingas, etc., appeared not to have begun breeding, and apparently the first two only used the swamp as a roost. There must have been several thousand White Ibises and perhaps a hundred Egrets that used the swamp, and countless Little Blue, Louisiana and Night Herons of both species. None of these had apparently begun to breed. The season appeared late, and Tom thought that when they did breed they would probably build their nests out among the sloughs and willow islands somewhere on the prairie.

Just east of camp, only a few hundred yards up the slough, was a very lovely "bonnet" lake, a feeding ground for many of these birds, and at its outlet I collected several Wood Ducks of both sexes, adults in full breeding plumage. As Florida Wood Ducks are thought, by some of the gunners there, to be rather smaller than our northern species, I took pretty careful measurements and found them to be identical as to wings, tail, tarsus and bill. In length four birds measured seventeen and one half inches when stretched to their utmost immediately after killing, and one reached seventeen and three quarters.

On March 26 we broke camp, yoked up our oxen, and left this

pleasantest of camp sites for the Burnt Pens, ten miles away on the trail to Fort Myers.

On the way to the Burnt Pens we had a very interesting experience with a pair of Sandhill Cranes, whose young we discovered "*peeping*" out on the prairie. Its *peeps* were to us absolutely indistinguishable from the calls of the numerous Jorees in the surrounding saw palmetto, and the solicitude of its parents was almost human.

We spent the night at the Burnt Pens and the next day, March 27, Tom and I left for Fort Myers in the automobile, leaving Peter to follow with the schooner.

I am glad to report that Tom Hand returned later to the Okaloa-coochee as warden, under the auspices of the National Association of Audubon Societies. There are still a few "*crackers*" who have not yet been educated against plume hunting, and as we had, while camping there, seen suspicious tracks in the swamp, Mr. T. Gilbert Pearson very gladly complied with the suggestion that someone be sent there to watch the rookery and its vicinity until the end of the breeding season.

CABOT'S TYPES OF YUCATAN BIRDS.

BY OUTRAM BANGS.

DURING the early days of the Boston Society of Natural History, in the "fortys," Dr. Samuel Cabot, Jr., was for a short period an active ornithologist. He collected birds vigorously himself and exchanged with many European naturalists and dealers. He also accompanied Stephens on his second expedition to Yucatan, and remained in that country from October, 1841, until June, 1842, visiting Cozumel Island at some time during that period. He made a collection of birds, which, judged by the rather informal list published in the appendix to '*Incidents of Travel in Yucatan*' by John L. Stephens (Vol. II, p. 469), must have been fairly representative, and was certainly the first collection of any size to come out of the region.